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PROGRESSIVE LOCOMOTOR ATAXY.

Read before the Boston Society for Medical Observation by S. G. WEBBER, M.D., Boston.

THIS disease was known formerly as *tabes dorsalis*, and as such is well described by Romberg; but the whole of the group of symptoms belonging to it was not fully recognized until Duchenne (of Boulogne) communicated a memoir on that subject to the Society of Medicine of Paris in 1857. This memoir is reproduced in all its essential particulars in his work "L'Electrisation Localisée." Since that date, observers in other places have continued the investigations, and an extensive literature on the subject has been created.

The two cases here related illustrate two different forms of the disease; but in neither do all the symptoms occur which are sometimes met. For a fuller description reference may be made to Trousseau's Clinique Médicale de l'Hôtel Dieu, t. ii.; to St. George's Hospital Reports, vol. i.; an article by Dr. J. L. Clarke; or to Reynolds's System of Medicine, vol. ii. Dr. Radcliffe, in the last work, sums up the distinctive symptoms as follows:—

"A peculiar gait, arising from want of coördinating motor power in the lower extremities—a gait precipitate and staggering, the legs starting hither and thither in a very disorderly manner, and the heels coming down with a stamp at each step.

"No true paralysis in the lower extremities or elsewhere.

"Characteristic neuralgic pains, erratic, paroxysmal, in the feet and legs chiefly—pains of a boring, throbbing, shooting character, like those caused by a sharp electric shock.

"More or less numbness in the feet and legs chiefly, in all forms of sensibility, excepting that by which differences of temperature are recognized.

"Frequent impairment of sight or hearing, one or both.

"Frequent transitory or permanent strabismus or ptosis, one or both.

"No very obvious paralysis of the bladder or lower bowel.

"No necessary impairment of sexual power.

"No tingling or kindred phenomena.

"No marked impairment of muscular nutrition and irritability.

"No impairment of the mental faculties.

"Occasional injection of the conjunctivæ, with contraction of the pupils."

Dr. Radcliffe takes no notice, in this summary, of the usual order of precedence in the various symptoms. This, as described by Duchenne, is shown in the first of the following cases. The first period is characterized by "paralysis of one or several of the motor nerves of the eye, complicated with paralysis of the optic nerve, and by erratic, boring pains; the second, by the appearance of defects of coördination, and, soon after or simultaneously, by muscular and cutaneous insensibility, generally in the lower limbs, or sometimes in the upper limbs; the third, by generalization of the disease."

CASE I.—Mr. —— came to me last February, in accordance with the suggestion of Dr. Knight. He said he wished to know whether electricity would be of any use in restoring his lost power. He seemed to have very little faith in any kind of treatment, and his mental condition was one of great despondency. As he expressed himself, he thought he might as well die of this disease as of any other, if he was going to die at all.

He is about 59 years of age, has been married thirty years and had one child, which is dead. His business has been to construct and fit the wood-work for machinery. His father died of paralysis. He says he has had rheumatism very severely and frequently in every part of his body for the last thirty years. He is not aware of any cardiac trouble. He has many times during the last thirty years strained himself by lifting heavy weights—has at times been laid up for several days on that account; as he said, has had a "crick" in

his back by turns for several years. But nothing of this kind had occurred for months previous to his paralysis.

For many years he has had attacks of numbness in his right thumb, so that he could not write, especially in winter. For this he had rubbed his thumb with alcohol. If the attack was very severe, he might have only one during the winter; if less severe, he might have more.

Three or four years ago, his eyes were affected, on which account he consulted Dr. Williams, who told him he had amaurosis. The right eye was the worst, and was almost blind. The affection of the eyes came on rather suddenly. Subsequently, the amaurosis improved. He acknowledges no trouble in the head and no vertigo.

About one year ago last January, he noticed, while at work, that he had suddenly lost power over the left leg. He could not, while sitting on his stool, extend his leg. He did not fall down when he tried to walk, but could draw his leg after him. If he stumbled, however, he could not recover his balance. At the same time with the motor paralysis, there was a slight loss of sensation in the same leg. He seems subsequently to have regained considerable control over the muscles of his leg, or else the paralysis was not so complete as he stated, since, when I saw him, it was not very marked.

For several months there was a slow advance in the paralytic symptoms. The paralysis extended to his right leg, and that became worse than the left. It gradually extended up the right side to the right arm and then to the left arm.

Last December, he had paralysis of motion and somewhat of sensation in the right side of his face, and ptosis of the right eyelid. This did not last long. He wet his face in the morning in cold water, and used friction with a coarse salted towel; to this he ascribes the improvement which took place in his facial paralysis.

He thinks that since December he has been losing ground slowly, and that the disease has been gradually advancing.

Now, he has some difficulty in seeing, especially with his right eye, which reacts rather sluggishly under the influence of light. He has no abnormal sensations, as of itching, tingling, formication, &c. He has a sensation as of a cord bound round about the middle of the left arm. This sensation exists nowhere else. He complains of a sensation of cold nearly all the time, especially in the feet, up to the middle of the leg, and to a less degree in the body, but most marked in the left great toe and along the inside of the foot to the heel, and here it is accompanied with numbness. It exists to a less degree in corresponding parts of the right foot. The numbness also extends partly up the leg.

He balances tolerably well, and with his eyes shut can walk, though with a very unsteady gait. He can stand with his feet together and eyes shut, but sways backwards and forwards more than is natural in health. He thinks he has most difficulty in moving his legs in the morning, after lying a-bed all night.

When walking, he feels as though he must go fast, so as not to fall forwards, so that his feet may keep up with his head.

Sensation is not very good in the back of his head, and he is very sleepy. He feels best when lying down.

His appetite is poor; he is constipated, but is not troubled with flatus.

The examination ceased here, owing to the lateness of the hour, and I told him I would call the next day at his house for the purpose of examining the condition of the various sensations. The next day, excuse was made that his wife was sick, and I have not heard from him since.

Case II.—O. McG., a laborer, I saw at the City Hospital, in the service of Dr. Blake, who has kindly permitted me to make use of the case to further illustrate the subject. The hospital record states that he was a hard drinker till eight years ago, and since that time has indulged immoderately in whiskey, but has always been well and strong till last May. About one month before that time he was knocked down by a horse, which trod upon his right side. He is not aware of any injury to his head or back, though after the accident he had much pain in his side on breathing.

About May 1st, he first experienced a cold sensation in the left foot, as of a wet stocking drawn over it. In a month, the right foot was affected in a similar way. The sensation gradually extended, and in three months had reached the knees, when he was obliged to give up work.

He had no headache nor any trouble with his head for three months after the trouble in the lower extremities commenced. He then had sharp, darting pains in teeth, face and head, and since that time has felt lightheaded.

At present, the sensation of coldness has invaded the whole of the lower extremities and the body below a line passing through the lower ribs. There is also marked impairment of sensibility, which is worst at

the feet and decreases upwards. Reflex action is very much diminished or lost in the feet. Sensation and motion of the upper extremities seem to be impaired. Eyesight but little affected; he sometimes sees specks floating before his eyes. April 1st, the day of entrance into the hospital, in the afternoon, he complained of a cloudiness of vision for the first time. Pupils act naturally. Taste and smell unimpaired.

He is obliged to micturate quite frequently, and sometimes when he feels the desire to do so, he has a passage of urine unwittingly. He never passes urine while asleep.

His gait, when walking, is peculiarly characteristic of this affection; much more so than in the previous case. When attempting to walk, even if supported on each side, his legs are moved about in a very disorderly manner, sometimes sideways, sometimes forwards and backwards, sometimes crossing each other, and the heel comes down with emphasis upon the floor. If his eyes are shut, he cannot stand when the feet are brought together.

He became dissatisfied and homesick, and left the hospital in two days.

Only occasionally, as at the commencement of the attack in the first case, is there real paralysis of motion; the patient is unable to walk, and is perhaps confined to the bed, but can move his limbs with power, though in a disorderly manner and perhaps by jerks, not being able to check them at just the point desired.

The affection with which locomotor ataxy is most likely to be confounded is disease of the cerebellum, especially one of slow growth, as a tumor. But in an affection of the cerebellum there is found vertigo, sometimes vomiting, headache, or perhaps throbbing sensations in the head. The defect in motion is also different. The gait is unsteady rather from lack of power over the muscles, or on account of the vertigo, than from defect of coördinating power. The vision may be affected in both diseases.

The second case is one of the more erratic cases, commencing with the second period, the symptoms of the first period appearing only intercurrently.

It is certainly a long duration for the disease to have dated back thirty years, yet that is the date at which the rheumatic pains were first felt, and according to his description they seemed to resemble the tearing and boring pains of locomotor ataxy more than those of rheumatism. Though not stated in the notes, I believe he complained of the pains having been in his lower extremities more frequently and more severely than elsewhere. It would also be very unusual that one should have rheumatism repeatedly, and the pains be so severe that their recollection was disagreeable, and yet be aware of no cardiac complication. I ought to say, however, that I did not make any examination, intending to do so while he was in bed next day. The disease is sometimes of very long duration; thus Mr. Carré refers to cases which had lasted 20, 21, 24 and even 28 years.

In the 2d volume of Reynolds's System of Medicine, Dr. C. B. Radcliffe does not recognize the fact that the upper extremities may be involved. Yet in the first case there was partial loss of sensation in the right thumb, occurring before the loss of motion in the lower limbs. Many other cases are on record, one by Duchenne, in which the abnormal condition was perceived in the upper extremity. Also, at *post mortems*, changes have been recognized in the cervical region of the cord. In a *post mortem* by Dr. J. L. Clarke, recorded in the *Lancet*, June 10, 1865, the change was noticed as high as the second cervical nerve.

The change usually found after death, as described by various observers, is degeneration of the posterior columns of the spinal cord, chiefly in the lumbar region, occasionally extending as high as the cervical, rarely confined to the latter region. This degeneration may extend to the neighboring posterior cornua and gray matter; it may even involve the posterior roots. This last is not a constant lesion, but is usually found where there is loss of sensation. "The degeneration is essentially characterized by gradual and progressive atrophy of the nervous elements, and by a gradual and progressive development of the connective tissue which separates them."—Carré, p. 189.

Similar changes have been found in the optic nerves, and also other cranial nerves when these have been affected, but more especially the motor nerves of the eyes.

Various influences have been assigned as the cause of this disease. Comparatively a large number of patients have suffered either from strains of the back or fatigue, or have been exposed to wet and cold during a long period of time. In both the cases herewith reported, there is a history of injury; in the first case often repeated straining, and the first pains appeared at about the same period as the first strain, or thirty years ago. In the second case, there is a history of an injury to the side, and

consequent difficulty of breathing, about a month before the peculiar coldness of the feet was noticed.

Duchenne states briefly — "Some patients accuse sudden or too prolonged cooling, suppression of transpiration; thus, for example, there is a sportsman who often has remained a long time with the feet and legs in the water. Once, the phenomena of this disease have shown themselves after a too prolonged sitz bath. Trousseau mentions hereditary taint, also, as a predisposing cause. This may appear in the first case, where it is stated that the father died of paralysis.

Out of 132 cases referred to by Carré, some of which, however, were not of this disease, 66 have no cause assigned, and no antecedents are given. In 17 there was a previous history of syphilis, in 8 of rheumatism, 6 had been exposed to unusual and frequent fatigue, 23 had been subjected to cold and dampness in various ways—either dwelling in damp houses, sleeping in the open air on damp ground, working in damp places, or were subject to sudden cooling while perspiring freely, and immediately after felt the first signs of the disease. In 9, there had been emotional excitement or long-continued anxiety. In 5, disease of the nervous system had existed among the ancestors. In 5, abuse of wine or venereal excess had been noted.

[To be concluded.]

RUPTURE OF THE UTERUS AND VAGINA.

By Edward Barton, M.D., of Orange, Mass.

I was called, April 7th, 7 o'clock, A.M., to Mrs. ——, Irish, aged 40, mother of three children, one stillborn. She was of medium size, rather fleshy, of uniform good health, except that she had a bronchial difficulty, with hoarseness. I learned from two female attendants and the patient, that she was attacked with labor pains about 5, P.M., the day before; that the full time for labor had arrived; that labor progressed apparently favorably till 10½ o'clock, when she had a very severe pain, accompanied with a tearing sensation low down in the left side, and an audible snap, which was heard in an adjoining room; that the pains ceased from that time; that severe hæmorrhage and free vomiting ensued, and that she became cold and languid. I found her with pale and sunken countenance, cold extremities and feeble pulse, and occasionally eructating dark-colored matter from the stomach, which she frequently had done during the night.

Under these circumstances, I made a vaginal examination, but finding such a confused state of things that I could not ascertain anything satisfactorily by the feel of the finger, I carried the hand within the vagina and discovered a laceration, and an entire separation of the vagina from the uterus, with two longitudinal rents in the upper third of the vagina—one anterior, the other posterior—and both a little to the left of the median line; these rents extending into the left portion of the cervix uteri, and there meeting. This triangular formed flap was turned down and pendulous within the vagina, some three inches. The uterus was high up, its cervix resting to the right of the sacro-vertebral prominence, with its fundus turned to the right, and apparently empty and firmly contracted. The fœtus was not within reach while the hand was within the pelvis, but it could be felt through the abdominal parietes, above the umbilicus.

I could not satisfy myself whether the membranes had been ruptured before the accident, but the patient was sure that there had been no sudden gush of water.

It appeared very clear that the fœtus and placenta had escaped within the abdominal cavity, and I explained the nature of the case to the patient, and informed her of what the certain result must be. Under the circumstances, it seemed a serious question whether it would be an act of mercy to attempt to do anything with a view of delivery.

She was stimulated, had warmth applied to the extremities, and an opiate administered; after the lapse of several hours, the patient not getting materially worse, I decided to make an attempt to deliver. She was etherized; the hand, moistened with warm water, was carried through the rent to the left of the uterus, its fundus grasped within the hand, and found empty and firmly contracted. The hand passed up, with its dorsum to the parietes, above the umbilicus, and rested upon the breech of the fœtus, which lay transversely, with its head and shoulders in the left iliac region; but the omentum intervened, and the hand was drawn down and passed beneath the omentum, the breech gained, and then by degrees the right foot. Failing to secure the left, the right was drawn down and secured, and then the left found and brought down also; traction was commenced, and after some difficulty the patient was delivered of a large female child, and then of

the placenta, with the cord entire. The hand was again passed within the vagina; there was no protrusion of the viscera through the rent, and the lacerated parts were adjusted as well as circumstances would admit.

At this stage of proceeding, the patient was very low, the pulse being hardly perceptible. As soon as she could be made to swallow, stimulants were freely given, warm applications to the extremities and warm spirit lotion to the abdomen. At the end of an hour reaction had slightly taken place, and at the expiration of five hours she appeared about as well as before I commenced delivery. At 8 o'clock, P.M., her pulse was 140, and I left her with morphine gr. $\frac{1}{8}$ every two hours, to be alternated with quinine gr. $\frac{1}{6}$, with whiskey at short intervals.

8th, A.M.—Patient slept two hours during the night. Has vomited frequently; is thirsty; tongue dry; has better warmth of extremities; complains of some abdominal tenderness, but no pain; abdomen rather full, but not tympanitic; has urinated; no hæmorrhage; countenance full as good; pulse 140. Continue the medicine. Has crust tea.

P.M.—No worse. Continue treatment.

9th.—Slept considerable during the night. Says she "feels no way worse." Skin is moist and warm; vomits the same dark fluid, and is thirsty; pulse 136; abdominal tenderness about the same. Continue the treatment.

P.M.—Has passed the day very well. Occasionally vomits; no vaginal discharge. No change of treatment.

10th.—Slept during the night. Skin is warm and moist; vomits the same dark fluid; is thirsty; tongue dry and covered with brownish coat; abdomen is tympanitic; no increase of tenderness; no pain; pulse 135. For the first time, there is a discharge from the vagina of bloody serum, which ran through the bed in a puddle on the floor.

11th.—No particular change. Vomits; less vaginal discharge; pulse 132.

12th.—There is no great change. Has very little pain or tenderness; vomits, and is thirsty; pulse 136. Up to this time, there has been no change in the breasts, but now there is some hardness and she feels chilly.

13th.—Did not pass a good night, but there is no change in appearances. Pulse 135. There is secretion of milk; urinates well; fœtid vaginal discharge.

14th.—Bowels moved freely by enema; pulse 132; no secretion of milk.

15th.—Is as well. Vomits less; has less tenderness; bowels moved voluntarily; pulse 132.

16th.—Did not pass a good night; was restless. Complains of pain in umbilical region; the navel pouches out, and there is increase of heat and tumefaction of the tissues about the region. Pulse 132. The discharge from the vagina is described as looking like yolk of egg, and is very fœtid. There is more dryness of the mouth, and thirst. Omit quinine.

19th.—Aphthous deposition on tongue.

21st.—Appears quite as well; very little tenderness; bowels soft and less full; no discharge from vagina; pulse 115.

24th.—Sat on the side of the bed yesterday more than an hour. Did not rest as well last night; has less appetite; vomited in the night; pulse 120.

25th.—Seems better. Tongue moist and clean; takes more nourishment; pulse 90; bowels soft; no vaginal discharge. Diminish morphine one half.

27th.—Bowels moved by enema, and in twelve hours moved twice voluntarily, and vomited; pulse 95.

29th.—No nausea; no thirst; no tenderness; bowels soft; no vaginal discharge; pulse 102.

At 4 o'clock, A.M., on May 5th, she had a chill, with pain in her bowels, her extremities became cold, and she died in one hour, having lived twenty-eight days and six hours after the accident. No autopsy.

I made no vaginal examination after the day of delivery.

In treating the case, my object from the commencement was to keep her constantly under the influence of opiates, not to the extent of narcotism, but so that its effects could be felt by the patient and seen by others. The patient was not well nursed.

She was allowed to change her position at pleasure, and she turned from side to side, and had strength to help herself considerably, and for the last few days prior to the last *two*, there was an increase of strength. Her bowels being so natural, soft, and free from tenderness, and the vaginal discharge having ceased for so long a time, seemed to indicate that she was doing well; and at times, losing sight of my better judgment, I would half believe that she would recover.

It is worthy of mention that the patient had a large sore on the nates, apparently the result of a scald from hot applications during labor, by the female attendants. What influence, if any, this had in producing rupture, we cannot decide.

Hospital Reports.

BOSTON CITY HOSPITAL.

Notes of Operations during the month of June, 1868. Reported by FRANK W. DRAPER, House Surgeon.

CASE I.—*Large Tumor of the Neck; Excision.* (Service of Dr. D. W. CHEEVER.)—Mrs. F., aged 68, reported her disease to be of four years' duration. It commenced as a small swelling below the angle of the lower jaw, on the left side. In two years, it attained the size of a pullet's egg. In August, 1866, it was removed. Within three months, the growth returned *in situ*, and gradually developed, until, at the time of entrance to the hospital (June, 1868), a tumor of the size of a cocoa-nut occupied the side of the neck. It was covered with healthy integument, and its surface was lobulated; at the most dependent part, a single cyst appeared to contain fluid. It was apparently attached firmly to the surrounding tissues. The trachea was pushed towards the opposite side, and respiration and deglutition were, in some degree, compromised. The patient's health had not been very seriously affected, and she possessed unusual vigor for her time of life.

The growth was removed by Dr. Cheever, as follows:—The patient having been slowly etherized, a primary incision was made, elliptical in shape, and extending downward from the mastoid process over the most prominent portion of the tumor, a distance of six inches and a half, to the median line of the neck. From this incision, the dissection was carried around the growth to its under surface, the adhesions being firm and general. The point of strongest attachment was near the angle of the jaw, where the bone had been laid bare by the disease over a space an inch long. In the course of the dissection, which was unusually deep and extensive, the following parts were exposed. The sterno-mastoid was free, and could be drawn outwards, and with it the external jugular vein. The omo-hyoid was implicated in the growth. The digastric muscle was divided in its tendinous portion, as it was incorporated in the tumor. Toward the median line, the thyroid cartilage was extensively exposed. The whole of the floors of the submaxillary and superior carotid triangles were laid bare; and also one half of the inferior carotid triangle. The internal jugular vein, near the lower part of the wound, ran in contact with, and was adherent to the tumor, and had to be manipulated very carefully. The common carotid artery was exposed from below the omo-hyoid to its point of bifurcation. The external and internal carotids were uncovered as high as the angle of the jaw. The spinal accessory nerve was seen and avoided. The tumor burrowed under the jaw, and was separated from the mouth only by mucous membrane. It was dissected out by the aid of one finger in the mouth, without opening that cavity. No large arteries or veins were cut. Vessels were tied as they were divided, or previously, if discovered in the tissues in the way of the knife. By this means hæmorrhage was, in great measure, avoided. In using the precaution, however, of tying vessels before section, a ligature was passed around what proved to be the thyro-hyoid branch of the hypoglossal nerve. Terminal filaments of the facial nerve were necessarily divided.

The tumor, after removal, was of the size and shape of a cocoa-nut of medium dimensions. Its weight was 9¾ ounces Troy. A section presented all the characteristic appearances of encephaloid growths. The cyst noticed before the operation was found to contain half an ounce of sanguineous serum. The whole mass was cleanly removed, its limits being well defined. The submaxillary gland had been removed at the first operation, two years ago.

The wound was left open four hours, and at the end of that time the edges were easily approximated with silk sutures placed at intervals of half an inch. Cold-water dressing was applied.

Recovery, subsequently, was moderate. During the first four days, severe pain in the epigastrium, occurring in paroxysms, indicated the administration of opiates. So severe and persistent were these paroxysms, that it was feared some branch of the pneumogastric nerve had been ligatured; and Dr. Cheever had determined, if relief did not come the following morning, to reöpen the wound, and seek for and cut away the mutilated extremities of the nerve with curved scissors, at any hazard. On the fifth day, fortunately, the symptoms subsided, and the patient began to take and digest food. Following this, a light attack of erysipelas retarded the healing process, which had just fairly commenced. Having passed successively over the face and scalp, it subsided after eight days. On the sixteenth day, all the ligatures were removed except two; these two proved to be attached to the divided extremities of the nerve before alluded to, and they were withdrawn on the

nineteenth day. Traction upon them, in the interval, gave rise to much pain and numbness in the tongue. Meanwhile, the tongue had experienced interesting phenomena as the result of ligation. The side of the tongue nearest the seat of operation was atrophied and anæmic, as if from ill nutrition. Its power of motion was unimpaired, but the sense of taste and ordinary sensation were obviously affected.

The wound healed kindly, with very little suppuration. It was syringed daily with diluted liquor sodæ chlorinatæ. Tonics and stimulants were administered internally, and the diet was carefully regulated to suit an appetite indifferent from the first. The patient was discharged, nearly well, after seven weeks; the wound having healed, leaving a cicatrix along the edge of the sterno-mastoid muscle, without deformity. Very slight facial paralysis, limited to the lower lip, existed, owing to the unavoidable section of the cervico-facial filaments of the facial nerve. The tongue was recovering its looks and functions, though still insensible on the left side. This peculiar paralysis is hard to explain, as no part of the gustatory division of the fifth pair had been divided, but filaments of the hypoglossal, facial, and perhaps the inferior maxillary division of the trifacial, and possibly terminal fibres of the pneumogastric. The intimate connection of all these nerves by anastomosis "renders them one great battery of allied and inter-dependent nervous action."

Case II.—*Epulis of the Upper Jaw; Removal of the Palate Process, Alveolar Processes and one half of the Antrum by Section.* (Operation by Dr. D. W. Cheever.)—M. H., aged 38, married. The disease was of ten years' duration. Having commenced along the inside of the alveolar process of the upper jaw, at the edge of the gum, it had slowly developed, until, at entrance, a flattened, oval tumor, of almost cartilaginous hardness, occupied the palate process, from the teeth to the median line. Deglutition and speech were interfered with.

June 2d, 1868.—The diseased mass was removed, with a portion of the upper jaw involved, as follows:—A primary incision was carried from the side of the nose, around the ala, and then downwards through the centre of the upper lip. The flaps were dissected on either side, and the body of the bone exposed. The left central upper incisor was extracted, and incisions were made along the median line of the hard palate, and outward in the line of the suture with the palate bone. With a small saw, the body of the bone was divided through into the antrum, from the tuberosity forwards. The palate process was cut in the inferior nasal meatus, with large-bladed bone-forceps, and the whole segment being now loosened from its attachments was readily extracted. Two ligatures controlled the bleeding. Silk sutures retained the flaps in position.

With the exception of a slight attack of erysipelas, as a complication, the recovery was satisfactorily rapid. The external wound healed without suppuration. A lotion of diluted liquor sodæ chlorinatæ (one part to five) was used for the cavity of the mouth. The external deformity was hardly noticeable. The patient was discharged, well, in one month from the time of operation. During the whole case, she nursed daily a healthy child, four months old.

Case III.—*Lithotomy.* (Service of Dr. Cheever.)—A. D., male, aged 17, had had all the symptoms of vesical calculus during the preceding two years—pain in the bladder, difficult micturition, with pain referred to glans penis, and running down the thigh, occasional stopping of the stream in urination, hæmaturia, mucous urine, and distress in riding in a wagon without springs. The sound readily detected an irregular stone lying at the posterior part of the bladder; not encysted.

Lithotomy was performed as follows:—The patient having been etherized and placed in position on a table, the bladder was filled with tepid water, and a staff introduced. With a long, narrow, middle-point knife, a puncture was made just outside the perineal centre, the forefinger having been inserted into the rectum as a guide. With the edge of the knife downward, the point was pushed directly onward, without dissection, until it reached the groove of the staff, anteriorly to the prostate. The handle of the staff was now depressed, and, carrying the point of the knife with it, the bladder was punctured through the left lateral lobe of the prostate gland, and the staff withdrawn. This first incision being too small for the extraction of the calculus, the knife was passed in on the finger, and the right lobe of the prostate incised; thus converting the lateral into a bi-lateral operation. The stone was found just behind the prostate; it was very friable, easily breaking under the slightest pressure. It was removed in four pieces, with small calculus forceps; its size, when entire, being that of an English walnut. The bladder was wash-

ed out with warm water through the wound, and an elastic catheter introduced, also through the wound, and retained in the bladder by adhesive straps around the thighs.

Recovery was progressive, and without complication. On the fourth day, the catheter was removed. The wound closed well. On the thirteenth day, the urine began to pass by the urethra, and in five days more the bladder retained its contents readily. In nineteen days after the operation, the perineal wound was closed so that no urine passed through it, and, in thirty-four days, the patient was discharged, well.

FIRST ANNUAL REPORT OF THE OFFICERS OF THE MINNESOTA HOSPITAL FOR THE INSANE, AT ST. PETER. 1867.

The Trustees first give some information of what was done by the State for the insane previously to 1866, and it appears that some fifty-five patients were sent to the Iowa Hospital, and seven to St. Vincent's Institution, St. Louis, at considerable expense and inconvenience. In 1865, they were notified that no more patients could be sent to Iowa, and a little later that those already there must be removed. On the 2d of March, 1866, the Legislature passed an act for the establishment and location of a hospital for insane in the State of Minnesota, and to provide for the regulation of the same. A Board of Trustees was appointed and authorized to erect, lease or purchase buildings for temporary use, and to remove the patients from Iowa. Fifteen thousand dollars were appropriated for this purpose. By the same act, a committee was appointed to locate the State Hospital. On the first of July, 1866, this committee reported the hospital located at St. Peter; a farm of 210 acres having been purchased by the citizens of that place, and conveyed to the State in fee simple, for the use of the hospital, at a cost of $7000. The Trustees immediately bought the property known as the "Ewing House," a dilapidated hotel, in the neighborhood, repaired and furnished the buildings to accommodate about forty patients, elected Dr. Samuel E. Shanty, of Utica, N.Y., Medical Superintendent on the 2d of October, and on the 6th of December opened the institution for the reception of patients. The rooms were filled as soon as it was known that the hospital was ready, and the pressure for admittance became so urgent that the Trustees, in February, 1867, asked and obtained an appropriation of $40,000 to commence the erection of permanent buildings. A part of this fund was used for another temporary building to be occupied while the permanent hospital is in process of construction, so great was the demand for immediate accommodations for patients, some of them coming hundreds of miles and demanding admittance.

The plan—for the permanent building—of Samuel Sloan, of Philadelphia, an architect of large experience in similar structures, was accepted, and the central building, and one section on each side, with returns, and having a frontage of 374 feet, are in process of erection. The whole building will be constructed of hammered stone, with broken range and well pointed.

From the report of Dr. Shanty, we learn that he entered on his duties on the 1st of November, 1866; that the first patient was admitted into the temporary buildings Dec. 12th, and that Feb. 5th, the number had reached 48, those having been returned from the State of Iowa. The last of May, the number had increased to 56, crowding the rooms to a dangerous limit, with thirty applications in advance. The new temporary building was then commenced and finished in October, accommodating 50 men patients, which will be pretty fully occupied.

The whole number admitted during the year was 97. From this number 13 were discharged—10 as recovered, 2 died, and 1 eloped, unimproved, leaving 84 in the institution at the end of the year.

It is stated that the proportion of insane to sane, in the State of Minnesota, is not so large as in the older States; but it is predicted that, the State being settled so largely by invalids on account of its supposed favorable climate, as time advances the proportion will rapidly increase as the result of their infirmities becomes manifest in their descendants.

C. K. B.

Adulterated Subnitrate of Bismuth.—M. Roussin, in a communication to the Society of Pharmacy of Paris, states that he had found 28 per cent. of phosphate of lime in subnitrate of bismuth. The author tests the subnitrate by dissolving 15 grains in a little nitric, or, better, muriatic acid, and adding tartaric acid. If now an excess of solution of caustic potash be added, no precipitate will follow if the salt is pure, but if phosphate of lime is present it is precipitated.—*Jour. de Pharm.*

Reports of Medical Societies.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

The Fifth Annual Meeting of the American Ophthalmological Society was held at Newport on Tuesday and Wednesday, 21st and 22d inst. In the absence of the President, Dr. Edward Delafield, of New York, Dr. H. W. Williams, of Boston, Vice President, presided. After the reading of the minutes of the last meeting and the appointment of various committees, Dr. G. Hay, of Boston, read an able report on the progress of ophthalmology during the past year. The following papers were read and discussed:—

Report of a case showing Anæsthesia of the Cornea and radiating fibres of the Iris without Intra-ocular Lesion. Dr. J. S. Hildreth, Chicago.

Case of Monocular Mydriasis dependent on Central Lesion. Dr. D. B. St. J. Roosa, New York.

Relative Accommodation. Dr. E. G. Loring, New York.

Astigmatism, with Color Test. Dr. J. Green, St. Louis.

Binocular Vision from Thaumatrope. Dr. B. Joy Jeffries, Boston.

Retinitis in Glucosuria. Dr. H. D. Noyes, New York.

Instrument for illustrating the Laws of Refraction and Accommodation. Dr. R. Murdock, Baltimore.

A Point in the Physiology of Vision. Dr. B. Joy Jeffries, Boston.

Case of laying aside of Spectacles in Old Age. Dr. J. Green, St. Louis.

New Cystotome for Modified Linear Extraction. Dr. G. Hay, Boston.

Modification of Williams's Method of Treatment in Lachrymal Obstruction. Dr. J. Green, St. Louis.

Specimen of Bone Corpuscles from Choroid. Dr. B. Joy Jeffries, Boston.

Inclination of the Vertical Meridian of the Eyeball in the direction of Vision upward and outward. Dr. G. Hay, Boston.

Reports of Cases and Practical Observations in Ophthalmology. Dr. E. Williams, Cincinnati.

Remarks on Operations for Cataract. Dr. H. D. Noyes, New York.

After Treatment of Capital Operations. Dr. C. R. Agnew, New York.

Case of Herpes Zoster Frontalis. Dr. B. Joy Jeffries, Boston.

Tests for Insufficiency of Recti Interni. Dr. E. G. Loring, New York.

New Series of Test Letters. Dr. J. Green, St. Louis.

An amendment to the By-laws was unanimously adopted, to the effect that no member of the Society should place on his sign or announce in print in any public manner that he gave special attention to diseases of the Eye.

The following officers were elected for the ensuing year:—*President*, Dr. H. W. Williams, Boston. *Vice President*, Dr. C. R. Agnew, New York. *Secretary and Treasurer*, Dr. H. D. Noyes, New York. *Corresponding Secretary*, Dr. H. Althof, New York.

At 6, P.M., Wednesday, the Society adjourned to meet at Newport on the third Wednesday of July, 1869.

A social supper in the evening was enlivened by the presence of the wives of several of the members.

Bibliographical Notices.

The Variation of Animals and Plants under Domestication. By Charles Darwin, M.A., F.R.S., &c. With a Preface by Prof. Asa Gray. Two Vols. 8vo. Pp. 494, 568. N. York: Orange Judd & Co.

These very interesting volumes we do not feel competent to review critically. Starting with the principle of Natural Selection, we pass gradually to the so-called Darwinian theory. Whatever difference of opinion there may be among naturalists as to the truth of Mr. Darwin's views, there can be none in according to the very interesting account he has here given of the gradual changes which care, cultivation, breeding, and selection, cause in plants and animals, high praise as a useful work.

It is fully endorsed by Prof. Asa Gray as a valuable treatise for agriculturists and for breeders.

Not all of us perhaps can appreciate the height of flower-fancy in Holland, where a new tulip was worth a fortune, nor the enthusiasm of the pigeon fancier, who exclaims, in referring to a favorite breed, "If it were possible for noblemen and gentlemen to know the amazing amount of solace and pleasure derived from the Almond Tumblers, when they begin to understand their properties, I should think that scarce any nobleman or gentleman would be without their aviaries of Almond Tumblers."

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Medical and Surgical Journal.

Boston: Thursday, July 30, 1868.

CARNEY HOSPITAL.

We have been favored by one of the Medical Staff with the following account of the history and objects of this Institution:

In January, 1863, the late Andrew Carney, at the solicitation of Sister Anne Alexis, of the Camden Street Asylum, bought the estate of the deceased J. C. Howe. It is situated near the head of Broadway, at South Boston, on the south western slope of "Dorchester Heights." It is an admirable site for a large hospital, commanding as it does a fine view of the city and country, and being well drained. The old mansion house was repaired under Mr. Carney's care and at his expense, and given to the Sisters, and it was opened as a hospital June 1st, 1863, under the following rules, viz.: "That it should be forever used by the Sisters of Charity as a hospital, where the sick, without distinction of creed, color or nation, should be received and cared for; and that no patient within its walls be deprived of his or her minister."

From that time, and under such principles, it has quietly worked, until July 13th, 1868, when the new wing of the larger hospital, which was erected according to the designs of the founder, was opened. Five hundred and fifteen patients have been received and treated during this time.

On the opening of this wing the Sisters deemed it advisable to have a full staff of Physicians and Surgeons. Accordingly they appointed the following persons:

Consulting Physicians.—Henry I. Bowditch, M.D. (President of the Board); Charles G. Putnam, M.D; M. K. Hartnett, M.D.

Consulting Surgeons.—Winslow Lewis, M.D.; D. McB. Thaxter, M.D.; Horatio R. Storer, M.D.

Attending Physicians.—Hugh Ferguson, M.D.; F. I. Knight, M.D; S. G. Webber, M.D.

Attending Surgeons.—P. A. O'Connell, M. D.; F. B. Greenough, M.D.; S. W. Langmaid, M.D.

The out-patients will be for the present cared for by the Attending Physicians and Surgeons.

There are some few peculiarities in the management of this hospital which we deem worthy of notice by the profession and by the public.

1st. The Sisters have the supreme control of all its arrangements, subject to the rules of their superiors at Emmetsburg. They will, however, receive the recommendations of the whole Board, of which they will nominate the President, who, with the Secretary chosen by the Board, will constitute an advisory committee with whom the Sisters will feel at liberty to consult whenever they may see fit so to do.

2d. The Consulting Board, instead of being a merely honorary body as in most hospitals, will have a joint action with the Attending Board in the nomination to the Sisters of candidates to fill all vacancies in the Board and in the medical offices, and in suggesting the general rules for the management of the Hospital.

3d. The attending staff will have full control of the patients in the wards, and of all in private rooms except those admitted under the first rule.

4th. The members of the Consulting Board will have the privilege of attending patients in the private rooms, and of charging for attendance as they would charge residents at a hotel.

5th. All regular physicians who are members of the Suffolk District Medical Society, will have the same privilege, after obtaining a written recommendation from one of the Consulting Board, and a permit from the Sisters—provided that no Physician or Surgeon, whether a member of the Board or a practitioner in the city, shall have more than one patient in the hospital at the same time.

These last provisions will doubtless commend themselves to the approbation of the medical profession of Suffolk County. They are in full accordance with the truly catholic and liberal principles manifested by the founder. The Sisters will reserve the right of taking away this permission in case, after a trial of one year, it be found impossible to carry out the plan with entire success.

We have been furnished by Dr. Jones with an advance sheet from the *Richmond and Louisville Medical Journal*, describing the following monstrosity.

Account of the Four-legged Child, J. Myrtle Corban. *Nashville, Tenn.*, June 16, 1868.—The undersigned, in response to the request of a number of physicians and the relatives and friends of the unfortunate subject of this investigation, give the fol-

lowing testimony:—The infant, J. Myrtle Corban, has four legs and two distinct external female organs of generation, with two external openings of the urethra and two external openings of the double rectum. The external genito-urinary organs are as distinct as if they belonged to two separate human beings. The fæces and urine are passed (most generally simultaneously, particularly the urine,) from both external urinary and intestinal openings, situated respectively between the left and right pairs of legs.

The head and trunk are those of a living, well-developed, healthy, active infant of about five weeks, whilst the lower portion of the body is divided into the members of two distinct individuals, near the junction of the spinal column with the *os sacrum*. As far as our examination could be prosecuted in the living child, we are led to the belief that the lower portion of the spinal column is divided or cleft, and that there are *two pelvic arches supporting the four limbs*, which are situated upon the same plane.

Photographs of this infant have been made by the advice and under the supervision of one of our number.

The reality in this case surpasses expectation, and we are of the opinion that this interesting *living monstrosity* exceeds in its curious manifestation of the powers of nature in abnormal productions, the celebrated "Siamese Twins."

JOSEPH JONES, M.D.,
Prof. of Phys. and Path., U. of Nashville.
PAUL F. EVE, M.D.,
Prof. of Surgery, University of Nashville.

Further remarks by Profs. Jones and Eve.

Josephine Myrtle is the third offspring of W. H. and Nancy Corban, aged twenty-five and thirty-four, the wife being the senior by nine years. They are so much alike in appearance, having red hair, blue eyes and very fair complexion, as to produce the impression of their being blood kin, which, however, is not the case. Mrs. Corban is from North Alabama, had borne one child to a former husband, the child having dark coloring, and resembling mostly the father, who had black hair and eyes. Her three children are all girls; the one already alluded to, now six years old, another three, and this *infant monstrosity*, now to be more minutely described, born the 12th of May, 1868, in Lincoln county, Tennessee, five weeks ago.

Mr. Corban is a Georgian, served in the Confederate army through the war, and was severely wounded in the right arm and left hand. The parents are in fair health, though the mother is *anæmic*. She recollects no fright or disturbance during her last pregnancy. The presentation was fortunately the head, which accounts for the preservation of the life of the child. It would be curious to speculate on the trouble which might have been produced had the feet or breech presented, while the result, in all probability, would have proved fatal to the infant, and possibly to the mother. Mrs. Corban says that there was nothing peculiar in the labor or delivery. When three weeks old the child weighed ten pounds. It now nurses healthily, is thriving well, and we saw it urinate simultaneously, between the *two pairs of labia of the two vaginæ*, situated about six inches apart. From the crown of the head to the *umbilicus* the child measures twelve inches, and from this point to the toes of the right and left external feet, eleven inches. From the *umbilicus* up, all is natural and well-formed; all below this, extraordinary and unnatural. An inch below the navel is a mark of an apparent failure for a second one. There are four distinct, pretty well developed, lower extremities. They exist in pairs on both sides of the median line which resembles the cleft of an ordinary pair of legs; but here there are no marks whatever of *anus* or *genital* organs, and upon pressure we discover no *os coccygis* or *sacrum*. The outer legs of both sides are the most natural of the four (though the foot of the right one is clubbed), but are widely separated by the two supernumerary ones, which are less developed, except at their junction with the body, from which they taper to the feet and toes more diminutive and which are turned inwards. One toe is bifid on the left extra inward extremity. At birth these extra legs were folded flat upon the abdomen. We are led to believe that there a *two uteri as well as two recti*; in fact that the pelvic organs are double. Of course a minute dissection would alone expose the true condition of these parts.

Should this infant reach maturity and the internal generative organs be double, there is nothing to prevent conception on both sides. The first difficulty will, however, be in her walking. The outer, or external legs, may be used for progression; the inner or inturned ones, probably never. These might be successfully amputated at the knee, or higher up.

One of us recollects of being in London, in January, 1830, at an exhibition of the Siamese Twins, when Sir Astley Cooper gave an opinion adverse to an operation with a view to separate them, but which

has always appeared to us feasible and without much risk of *peritonitis*; an operation, too, which should undoubtedly be performed in case of the death of one of them, for no medical man believes in the vulgar impression that they must die simultaneously. In the present case all surgical interference is, of course, out of the question, except that alluded to—removal of the extra legs.

Cases somewhat similar to the above have occurred and have been described. Rokitansky refers to two completely distinct bodies conjoined at their *ossa sacra* or *coccyges*, as in the well-known Hungarian sisters, Helena and Judith, born in 1701, who survived their twenty-second year.

Geoffrey St. Hilaire, alludes to cases of a trunk with two heads, some even Janus-like, having four upper and four lower extremities.

The case, however, recalled most vividly by Josephine Myrtle, is that of Rita-Christina, well known in Europe, and accurately described in this country years ago by Prof. Meigs. In this wonderful instance, there were two heads, two necks, four arms, but only two legs; and was thus the reverse of our case. From the *umbilicus* down, there was one well-formed child, but above this all the organs were double; in reality there existed two beings. The *rectum* and bladder were common to both, but all else in the trunk was double and distinct. One would sleep while the other played, &c., for they had *two spinal marrows, two brains, two hearts*, but the last two occupied a common *pericardium*. Unfortunately, after surviving a little over a year, one sickened and died, when the other, then in health, instantly expired.

Rita and Christina were born in Sardinia, 1829, and described by Dr. De Michaelis, Professor of Surgery in the Royal University of Sassari, and lived eighteen months.

The late Prof. J. C. Warren, of Boston, first described the Siamese twins brothers, when purchased of their mother by Capt. Coffin and Mr. Hunter (joint owners), and brought to that city, in 1829.

Carbolic Acid. *Mr. Editor*,—In your Journal of July 2d, 1868, p. 342, second paragraph of the page, are some points offered as general information in connection with the use of carbolic acid in this country, which need correction.

The Chief Medical Purveyor and Surgeon-General of the Army were familiar with the published uses and effects of the so-called carbolic acid (tar alcohol) at an early period of its application to medical uses, and imported it for use in the Army long before it was made in this country; and Dr. Squibb had nothing whatever to do with it until the coal tar distillers around New York produced an article which would answer the purposes of the imported preparation. He was then simply directed to procure it and put it up for Army use, and did so, but never prepared it nor called it by his name—nor sanctioned the use of his name in connection with it, nor with any other medicinal agent.

Very respectfully yours,

E. R. Squibb.

Brooklyn, N. Y., July 23, 1868.

Experiments showing the Occurrence of Vegetable Organisms in the Human Blood. By Joseph G. Richardson, M.D., Union Springs, Cayuga County, N. Y.—In the course of my examinations of nearly one thousand specimens of human blood during the past year, I have, in a large proportion of cases, met with the molecular substance denominated by Prof. Salisbury "*zymotosis translucens.*" In severe cases of rheumatism and neuralgia I have found long strings of these transparent granules, and occasionally homogeneous filaments; in the blood of patients afflicted with some other diseases, and of individuals enjoying comparative health, these particles were single, or adherent in rows of two to five or more, such rows often showing a tendency to become branched. They are doubtless identical with the so-called "globulins" of Donné (*Cours de Microscopie*, p. 85, Paris, 1844), and the "molecular substance" of Griffith and Henfry (*Micrographic Dictionary*, 2d edition, p. 92, London, 1860). But, in addition to them, I was at first surprised to find, in a few instances, that the blood contained in almost every field numerous minute, rounded particles, much more distinct than those above mentioned; not, like them, fading rapidly from view; having an active rotary or erratic motion, and strongly resembling the primary stage of certain infusoria, as seen in solutions of decomposing animal matter. They appeared in cases where the pulse was feeble and intermittent, the blood anæmic, and the powers of life at a low ebb; and diminished in number under tonic treatment, especially the administration of tincture of chloride of iron. It occurred to me that by this property of independent movement we might be able to recognize the existence of independent or-

ganisms within the blood, and thus obtain a strong presumptive evidence in favor of Prof. Salisbury's novel theories concerning the vegetable origin of disease; and in order to test the correctness of this surmise the following investigation was undertaken:—

Expt. 1. A drop of blood drawn from my own arm was placed upon a slide, and a minute portion of water, which had been standing four days upon some fragments of beef, and which, examined a few minutes before, exhibited multitudes of vibriones, was mixed with it, and the whole covered with a thin glass. Upon adjusting it under the microscope, the vibriones were found to be moving, some rapidly, some slowly, and some only as borne by the currents among the blood-corpuscles, apparently unaffected by the change of world which they had undergone. By arranging a filament of thread from the reservoir upon the growing slide, so as to supply the loss of fluid by evaporation, I was able to watch their progress, at short intervals, for about nine hours, which was, as far as I could judge, uninterrupted, towards the formation of vibratile filaments resembling the early stages of development in the so-called *Leptothrix Buccalis* found so abundantly in the tartar on the teeth. One particular filament, which was carefully watched, and of which drawings were made from time to time, whose movement, when first observed, was very active and constant, grew from a length of about $\frac{1}{1500}$th of an inch to that of about the $\frac{1}{1000}$th of an inch in eight hours, to that of about $\frac{1}{800}$th of an inch in seventeen hours; and at the end of twenty three hours, when the experiment was interrupted, had attained a length of about $\frac{1}{500}$th of an inch. The process of development seemed to be accompanied with a disposition to bend sharply at intervals of perhaps $\frac{1}{2000}$th of an inch, and shoot forth from the salient angle a branch equal in size to the parent trunk. As the organism increased in length, its movement diminished in rapidity, until towards the close of the experiment it nearly or quite ceased; its breadth continued the same throughout, and appeared to be about $\frac{1}{20000}$th of an inch.

According to the conclusions of Prof. J. Wyman, in his paper on the existence of living organisms in heated water,* neither vibrios nor bacteriums appeared (in water containing beef-juice) if the boiling was prolonged beyond the period of five hours; and the Professor quotes Pasteur* to the effect that the spores of some kinds of cryptogams (even those most salamander like, he appears to mean) perish at a dry heat of 266° F., so that the slides and covers used in the following experiment, being, after thorough cleansing, burnt off in the flame of an alcohol lamp, may probably be considered free from any such impurity.

Expt. 2. Jan. 6, 1868, at 8½, P.M., two hours after a slight supper, I drank a fluid-ounce of water, which, having stood upon some fragments of beef for two days, contained, as counted under the microscope, on an average (the mean of ten enumerations) about 14 vibriones and bacteria to each square $\frac{1}{1000}$th of an inch; a drop (or minim) being spread out under a thin glass one inch square, so that the f℥j, included, in round numbers, 7,000,000,000 of living organisms. This compound, although sufficiently repugnant to the palate, had no nauseating effect upon the stomach beyond that fairly attributable to mental disgust, and probably possessed no higher aroma than a professed gourmand used to enjoy in the saddle of venison which had garnished his larder until it acquired the true game flavor. Half an hour after the imbibition of the mixture, a drop of blood drawn from my arm, and examined on a slide simply wiped clean, showed, on rigid scrutiny during another half hour, but a single moving molecule. At 9½, P.M., a glass and cover, heated far beyond the limit above given as compatible with organic life, and scrupulously protected from exposure to deposits from the atmosphere, were used for the examination of another drop of blood, in which four molecules in active motion, precisely resembling that of infusoria seen in Expt. 1st, were visible. A drop drawn at 10, P.M., and examined between a glass and cover prepared with the same precautions, exhibited six specimens of moving bodies; while in a drop drawn at 10½, P.M., only two were detected during a careful search of half an hour's duration.

Expt. 3. At 7, P.M., Jan. 7, 1868, four hours after dinner, I swallowed four fluid-ounces of water which had been standing some seventy hours upon fragments of beef, and which, according to the data of experiment 2d, contained at least 27,000,000,000 living organisms. As this test was intended to be as far as possible a crucial one, at 8 o'clock I prepared a slide and cover in the following manner: after washing them tho-

* Amer. Jour. of the Med. Sciences, p. 283, Jan., 1868.

* Am. Jour. Sc. and Arts, p. 164, from Ann. de Sci. Nat., t. xvi. p. 81, 1861.

roughly and drying them on a clean cotton cloth I applied a drop of strong hydrochloric acid to the middle of the slide and laid upon it the glass cover, taking care that by suitable pressure the acid was evenly distributed between the surfaces; raising the cover after about a minute I held it by means of forceps in the flame of an alcohol lamp until all the acid was volatilized, and then placed it carefully under a small bell glass—the slide itself was similarly treated, and when both were quite cool a drop of blood (obtained from an incision made through integument painted with tr. ferri chlor.) was touched to the slide, which was quickly transferred beneath the bell glass applied to the glass cover, and the whole reversed and placed upon the microscope stage. The lenses being adjusted, I found the blood remarkably full of moving particles precisely resembling to my eye specimens of vibrio bacillus; these were so abundant that I counted twelve in about as many minutes, and at one time three were visible in the same field. At a quarter before nine another drop of blood drawn from a new incision near the last was examined between a slide and cover prepared exactly as the previous one, and with the same result, except that the revolving particles were fewer in number, only four being observed whose motion was unmistakable. At half past nine another drop from the second incision re-opened was examined between a slide and cover that had been simply heated without the application of acid, and on careful scrutiny for about half an hour only revealed three moving molecules. In examining for these I found a satisfactory method, after discovering one which changed its place under the lowest eye piece, was to put on that containing the cobweb micrometer, by which at least mistakes proceeding from oscillation of the head or vibration of the instrument were readily corrected.

But such investigations being made with only a one-eighth inch objective, and the lowest eye-piece of a Powell and Lealand's instrument, could not furnish positive proof that these moving particles were not merely inorganic matter undergoing molecular movement, or that if organized they were not the primary constituents or disintegrating residuum of white blood-corpuscles, and I therefore obtained from Mr. Wm. Wales an "Immersion" lens, having nominally but one-twenty-fifth inch focal length, for the purpose of verifying and extending my conclusions. This glass affords a power of about eleven hundred diameters with very clear definition, and after some preliminary study of the organisms in decomposing beef-juice, I made with its aid the following researches:—

Expt. 4. At 7.45, P.M., May 17, 1868, I drank four fluidounces of water similar to that employed in the preceding investigations, and containing multitudes of bacteria. At a quarter past eight I examined a drop of blood drawn with a cataract needle from the tip of my finger, and confined between a slide and cover cleaned with strong hydrochloric acid as above described; under the field of the one-twenty-fifth inch glass, the interspaces between the rows of blood corpuscles were found to contain multitudes of apparently spherical molecules in rapid and erratic motion—but so very minute as to readily escape notice even with this high power, except under the closest scrutiny; in the course of half an hour not less than one hundred were observed. At 9, P.M., another drop of blood examined with the same precautions exhibited, in addition to these minute particles, other bodies less active in their movements, of much greater magnitude, and which, under an amplification of eleven hundred diameters, appeared precisely similar to the bacteria I had been studying a few hours before in the identical decomposing beef-juice imbibed. Five of them were thus enlarged sufficiently to exhibit an unmistakable organized structure totally different from their associated aggregations of Beale's "germinal matter." (Plate XXVII. Fig. 208, *Microscope in Practical Medicine.*) Three of these bacteria were each about $\frac{1}{12000}$ of an inch in length and $\frac{1}{25000}$ of an inch in width, very distinctly constricted in the middle; a fourth was obviously composed of four, and a fifth of six joints, arranged in a straight line, whose motion was of that peculiar waving character so universal among the Oscillatoriaceæ. The last two were most clearly visible when they happened to lie vertically to the surface of the glass, and would probably escape observation under the one-eighth inch, except in that position, and be therefore mistaken for simple globular bodies, although in several cases I detected in the second and third experiments a shadowy elongation of one diameter in the revolving molecules then observed.

In view of the statement of M. Davaine to the French Academy of Medicine (*Medical News and Library*, vol. xxvi. p. 28), asserting a close connection between the appearance of bacteria in the blood and the occurrence of carbuncular disease, it is worthy of remark that neither at, nor subsequent to, either of the three occasions in

which I thus impregnated my blood with infusoria, were there any symptoms of carbunculous or other inflammatory malady. The only disturbances of the economy observed were headache, furred tongue, dryness of the throat, and slight diarrhœa, which all passed off in a day or two, the offending organisms being apparently soon eliminated by the various outlets for effete or noxious materials; even these deviations from health may have been accidents, the results of other causes.

Although I am well aware that the plans adopted do not preclude the possibility of error through the introduction of living organisms into the blood after it has left the walls of its vessels, yet I think most candid inquirers will admit that the fact that an increased number of moving particles were visible after an increased dose of vibriones (contained in the draught above mentioned *whose swarming population exceeded more than twenty times the sum total of every man, woman and child who walks upon our earth)*, and at the same time *in spite* of increased precautions which the most stubborn sceptic must acknowledge would have a tendency to diminish the chances of deception, goes far to prove that multitudes, probably millions, of infusoria, thus entering the stomach, find their way into the blood in a few hours, and, retaining their independent vitality, circulate with that vital fluid through the minutest ramifications of the arteries, and penetrate to every portion of the human system. And if this be true, how strong becomes the presumption that there are other plants more deleterious in their growth or more poisonous in their nature, which also thrive under certain circumstances within the blood, and each constitute the essence, the real *contagium*, of some so-called zymotic disease, as, for example, diphtheria and scarlet fever, smallpox and measles, as declared long ago by Prof. Salisbury, of Cleveland, and recently by Prof. Hallier, of Jena.

Action of the Nerves on Intestinal Secretion.—There are many physiologists who consider that increased intestinal secretion is the consequence of diminished rather than of enhanced nervous action. The problem is one of high scientific interest, and, as in the case of cholera, of grave pathological importance. An experiment of a crucial character, which has recently been attempted by M. Moreau, deserves, therefore, to be recorded. M. Moreau selected for his inquiry a dog, the intestine of which he had previously ascertained to be absolutely empty, and he then proceeded as follows: "Having chloroformed the animal, he made an incision in the abdominal wall along the linea alba, and, moving aside the epiploon, he drew out a fold of intestine, and divided it, by means of four ligatures of caoutchouc, into three separate constrictions. He next carefully divided the nerves proceeding to the middle fold, and then he replaced the gut and brought the edges of the abdominal wound together. The dog was killed several hours subsequently and carefully examined. Of the three artificial compartments of the intestine, the middle one, which had been deprived of nervous influence, was found filled with liquid matter; the other two were dilated and completely dry! Further research has, M. Moreau alleges, fully borne out these results, and the experiment has been performed before the Société de Biologie with equally conclusive results. It must not be forgotten that in all experiments in vivisection there are numerous and unavoidable sources of error which render induction a difficult and hardly satisfactory process. So far, however, as M. Moreau's inquiries go, they indicate a law by no means antagonistic to the inferences derived from clinical experience, and they certainly throw light on one of the most serious and assuredly not the least obscure points in the pathology of the alimentary canal.—*Med. Times & Gazette.*

Salivary Calculus.—Dr. Post showed, at a recent meeting of the New York Pathological Society, a specimen of salivary calculus taken from Wharton's duct, which had the peculiarity of being nearly tubular. —*Medical Record.*

Jefferson Medical College at Philadelphia.—We learn that the vacancy created in this institution by the resignation and retirement of the venerable Prof. Dunglison, has been filled by the appointment of Dr. J. Aitken Meigs to the chair of Institutes of Medicine.—*Cincinnati Lancet and Observer.*

The University of Naples has been closed on account of hostile demonstrations by the students against Prof. Luca.

According to some of the Paris Journals, the Minister for Public Instruction has proposed a dinner to the Professors of the Faculty who have been most severely treated by the ultra-clerical party.

Selections and Medical Items.

"A New Lute for the Laboratory."—A scientific journal contains a paragraph under this heading which we cannot altogether understand, for it alludes to zinc-white, fine sand, and other things not usually employed in the manufacture of musical instruments. However, as the laboratory is to have a lute, we are only too happy, as lovers of science, to present a song for the lute :—

Oh! come where the Cyanides silently flow,
And the Carburets droop o'er the Oxides below;
Where the rays of Potassium lie white on the hill,
And the song of the Silicate never is still.
Come, oh, come!
Tumti, tum, tum!
Peroxide of soda, and urani-um!

While alcohol's liquid at thirty degrees,
And no chemical change can affect manganese;
While alkalies flourish, and acids are free,
My heart shall be constant, sweet science, to thee!
Yes, to thee!
Fiddledum dee!
Zinc, borax, and bismuth, and HO+C.
—*London Fun.*

To Preserve Steel Goods from Rusting.—The simplest way of preventing the oxydation of polished iron and steel goods is to dust them over with quick lime. Where articles are required to be preserved for many months (such as polished steel grates), strips of paper freely covered with powdered lime are to be wrapped around the bars; or they may be placed in cases, and interstices filled up with quicklime. Piano-forte wire and small goods are preserved in the same way. The *rationale* of the method is this—steel will not oxidize in *dry* air. The presence of quicklime, from its hygrometric properties, secures dry air, and thus indirectly the lime preserves steel from rust. This is not a new plan, but it is the method adopted by the majority of the Birmingham houses.—*Journal of Applied Chemistry.*

Means of rendering Animal Fat Inodorous and Wholesome.—According to Prof. Hirzel, animal fats may be preserved in a good condition during a year without their contracting a bad odor, by mixing the recently melted fat, for example, 7 kilogrammes (14½ lbs.), with 20 grams. (5 drachms) of table salt and 15 grains of alum in powder, and heating till a scum is formed on the surface, composed of coagulated albumen, membranes, &c. The scum is separated, and the fat becomes clear and transparent. When it is cool, it is washed by malaxation many times with water, till the salt is removed. It is then held in a state of fusion, at a temperature sufficient to evaporate all the water without injuring the fat.—*Bulletin de la Société de Phar. de Bruxelles.*

On Rosanilin as a Reagent for Free Fatty Acids. By Dr. F. Jacobsen.—The author finds that rosanilin is insoluble in neutral fatty oils, but is at once colored pale red, more or less deep, if the oil is rancid, or has any free oily acid present, and if very rancid, as deep as gooseberry juice. The fuchsin of commerce (muriate, arseniate, &c., of rosanilin) dissolves in neither neutral or rancid oils, or fat acids. Oleic acid and all the fatty acids dissolve rosanilin immediately in great quantity, and are deeply colored. The oleate of rosanilin dissolves in all proportions in the oils and neutral fats. The rosanilin, for this reason, can be employed to detect free acid in mixtures of oils.—*Jour. de Chim. Méd.*, from *Neues Jahr. für Pharm.*

At the recent Commencement of the Long Island College Hospital, New York, the degree of M.D. was conferred on twenty-six graduates.

MEDICAL DIARY OF THE WEEK.

Monday, 9, A.M., Massachusetts General Hospital, Med. Clinic; 10, A.M., Medical Lecture. 9, A.M., City Hospital, Ophthalmic Clinic.
Tuesday, 9, A.M., City Hospital, Medical Clinic; 10, A.M., Medical Lecture. 9 to 11, A.M., Boston Dispensary. 10–11, A.M., Massachusetts Eye and Ear Infirmary.
Wednesday, 10 A.M., Massachusetts General Hospital Surgical Visit. 11 A.M., Operations.
Thursday, 11 A.M., Massachusetts General Hospital Clinical Surgical Lecture.
Friday, 9, A.M., City Hospital, Ophthalmic Clinic; 10, A.M., Surgical Visit; 11, A.M., Operations. 9 to 11, A.M., Boston Dispensary.
Saturday, 10, A.M., Massachusetts General Hospital Surgical Visit; 11, A.M., Operations.

Notice.—Part LVII. of Braithwaite's Retrospect was mailed from this office on the 30th inst. (to-day) to the members of the Massachusetts Medical Society who have paid their assessments for the year 1868–69. Members who have paid and do not find the book at their post office, are requested to forward their vouchers to the Librarian, care of David Clapp & Son, Medical and Surgical Journal Office, 334 Washington St., Boston.

Retired Members of the Society wishing the publications of said Society, are by By-law required to notify the Librarian as above, personally or by writing, once after the Annual Meeting.

To Correspondents.—Communications accepted:—On Ossification of the Spleen—On Thein—Abstract of Report of Commission of Mass. Med. Society to the International Medical Congress.

Books Received.—On Diseases of the Skin: A System of Cutaneous Medicine. By Erasmus Wilson, F.R.S. Seventh American from the Sixth English Edition. With twenty plates. 8vo. Pp. 795. Philadelphia: Henry C. Lea. 1868.—The Indigestions. By Thomas King Chambers. Second American from the Second London Edition. 8vo. Pp. 315.—Ueber Keloid. Von Dr. J. Collins Warren, aus Boston.

Deaths in Boston for the week ending Saturday noon, July 25th, 123. Males, 66—Females, 57.—Accident, 11—anæmia, 1—inflammation of the bowels, 3—congestion of the brain, 3—disease of the brain, 2—inflammation of the brain, 1—bronchitis, 2—cholera infantum, 33—cholera morbus, 1—consumption, 11—convulsions, 4—cyanosis, 1—debility, 2—diarrhœa, 6—dropsy, 1—dropsy of the brain, 4—drowned, 1—dysentery, 8—epilepsy, 1—scarlet fever, 1—typhoid fever, 1—disease of the heart, 2—disease of the hip-joint, 1—disease of the kidneys, 1—congestion of the lungs, 3—inflammation of the lungs, 3—measles, 2—old age, 2—paralysis, 2—peritonitis, 1—premature birth, 1—smallpox, 1—stricture, 1—stomatitis, 1—ulcer of stomach, 1—unknown, 3.

Under 5 years of age, 75—between 5 and 20 years, 15—between 20 and 40 years, 15—between 40 and 60 years, 11—above 60 years, 7. Born in the United States, 102—Ireland, 15—other places, 6.